

CLAIMS:

1. An ionically complexed colorant compound comprising

a) an ionic dye component having an apparent color characteristic;

5 b) a first dye counterion component having a known color characteristic that exhibits a color difference from the ionic dye component of at least about 10  $\Delta E^*$  units; and

c) a colorless counterion component;

10 wherein the ionic dye component is ionically complexed with the first dye counterion component and colorless counterion component in a predetermined ratio to form an ionically complexed colorant compound exhibiting a predetermined color.

2. The ionically complexed colorant compound of claim 1, wherein the colorless counterion component comprises less than about 40% of the total colorant compound by

15 weight.

3. The ionically complexed colorant compound of claim 1, wherein the colorless counterion component comprises less than about 20% of the total colorant compound by weight.

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4. The ionically complexed colorant compound of claim 1, wherein the colorless counterion component comprises less than about 10% of the total colorant compound by weight.

25 5. The ionically complexed colorant compound of claim 1, wherein the compound has a water solubility of less than 100 parts per million.

6. The ionically complexed colorant compound of claim 1, wherein the compound is substantially free of metal that is not covalently bound to the colorant compound.

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7. The ionically complexed colorant compound of claim 1, wherein the compound has a molecular weight of less than about 5000 Daltons.

8. The ionically complexed colorant compound of claim 1, wherein the compound  
5 has a molecular weight of less than about 3000 Daltons.

9. The ionically complexed colorant compound of claim 1, wherein the colorant comprises at least three dye components, and each of the three dye components exhibits a color difference from each of the other two dye components of at least about 10 ΔE\*  
10 units.

10. The ionically complexed colorant compound of claim 1, wherein the colorant comprises at least three dye components, and each of the three dye components exhibits a color difference from each of the other two dye components of at least about 20 ΔE\*  
15 units.

11. The ionically complexed colorant compound of claim 1, wherein the dye component comprises a plurality of ionic functionalities.

20 12. An ionically complexed colorant composition comprising  
a) an ionic dye component having an apparent color characteristic;  
b) a first dye counterion component having a known color characteristic that exhibits a color difference from the ionic dye component of at least about 10 ΔE\* units;  
and  
25 c) a colorless counterion component;

wherein the ionic dye component, the first dye counterion component and the colorless counterion component are ionically complexed in a predetermined ratio to form ionically complexed compounds that together in a colorant composition exhibit a predetermined color.

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13. The ionically complexed colorant composition of claim 12, wherein the composition comprises at least three dye components, and each of the three dye components exhibits a color difference from each of the other two dye components of at least about 10  $\Delta E^*$  units.

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14. A method of preparing an ionically complexed colorant of a predetermined color, comprising

- a) identifying an ionic dye component having an apparent color characteristic;
- 10 b) identifying a first dye counterion component having a known color characteristic that exhibits a color difference from the ionic dye component of at least about 10  $\Delta E^*$  units;
- c) identifying a colorless counterion component;
- 15 d) determining the ratio of the ionic dye component, first dye counterion and colorless counterion required to obtain the predetermined color desired for the ionically complexed colorant compound; and
- e) using the ratio determined in step d), complexing the ionic dye component with the first dye counterion and colorless counterion in the predetermined ratio to form an ionically complexed compound that exhibits the predetermined color.

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15. The method of claim 14, further comprising identifying a third dye counterion component having a known color characteristic,

25 wherein the determining step d) further comprises determining the ratio of the ionic dye component, first dye counterion, the colorless counterion and a second dye counterion required to obtain the predetermined color desired for the ionically complexed colorant compound; and

30 wherein the complexing step e) further comprises complexing the ionic dye component with the first dye counterion, the colorless counterion and the second dye counterion to form an ionically complexed colorant compound exhibiting the predetermined color.

16. A method of preparing an ionically complexed colorant composition of a predetermined color, comprising

- a) identifying an ionic dye component having an apparent color characteristic;
- 5 b) identifying a first dye counterion component having a known color characteristic that exhibits a color difference from the ionic dye component of at least about 10  $\Delta E^*$  units;
- c) identifying a colorless counterion component;
- d) determining the ratio of the ionic dye component, first dye counterion and 10 colorless counterion required to obtain the predetermined color desired for the ionically complexed colorant composition; and
- 15 e) using the ratio determined in step d), complexing the ionic dye component with the first dye counterion and colorless counterion in the predetermined ratio to form ionically complexed compounds that together in a colorant composition exhibit the predetermined color.

17. The method of claim 16, further comprising identifying a third dye counterion component having a known color characteristic,

20 wherein the determining step d) further comprises determining the ratio of the ionic dye component, first dye counterion, the colorless counterion and a second dye counterion required to obtain the predetermined color desired for the ionically complexed colorant composition; and

25 wherein the complexing step e) further comprises complexing the ionic dye component, the first dye counterion, the colorless counterion and the second dye counterion in the predetermined ratio to form ionically complexed compounds that together in a colorant composition exhibit the predetermined color.

18. A coatable colorant composition comprising the colorant of claim 1.

30 19. The coatable colorant composition of claim 18, wherein the composition is a latex paint.

20. A toner composition comprising the colorant of claim 1.

21. The toner composition of claim 20, wherein the toner comprises an amphipathic  
5 polymer.

22. An ink composition comprising the colorant of claim 1.

23. A color pre-concentrate composition comprising the colorant of claim 1.